Model Water Tower Competition Experience

Water Awareness & Outreach Committee
Student Activities Committee

Who Are We

Whitney Roberts
Communications Specialist
Lynchburg Water Resources

Mark Titcomb
Chief of Process Reliability
Newport News Waterworks

Shirley Smith
Project Manager
HRSD

Lilly Meighan
Communications Specialist
Western Virginia Water Authority

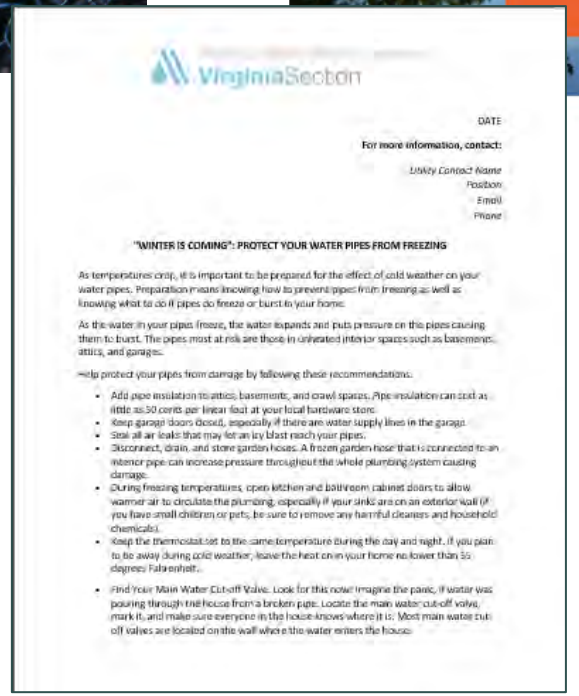
Laura Schirmer
Public Relations Specialist
Western Virginia Water Authority

Water Awareness and Outreach Committee

Find Us Online at www.vaawwa.org/page/water-awareness-and-outreach

The Water Awareness and Outreach Committee provides educational and networking opportunities for public information, education, and outreach professionals in water utilities throughout Virginia. This committee seeks to serve public information officers and education and outreach coordinators by connecting them to a wider professional network focused on the sharing of information, tactics, and resources related to drinking water quality and supply.

- Drinking Water Week Toolkit
- Networking and educational events
- Annual Public Information Awards
- Social Media Management for VA AWWA


VirginiaSection

DATE

For more information, contact:

Utility Contact Name
Position
Email
Phone

"WINTER IS COMING": PROTECT YOUR WATER PIPES FROM FREEZING

As temperatures drop, it is important to be prepared for the effect of cold weather on your water pipes. Preparation means knowing how to prevent pipes from freezing as well as knowing what to do if pipes do freeze or burst in your home.

As the water in your pipes freeze, the water expands and puts pressure on the pipes causing them to burst. The pipes most at risk are those in unheated interior spaces such as basements, attics, and garages.

Help protect your pipes from damage by following these recommendations:

- Add pipe insulation to attics, basements, and crawl spaces. Pipe insulation can cost as little as 50 cents per linear foot at your local hardware store.
- Keep garage doors closed, especially if there are water supply lines in the garage.
- Seal all air leaks that may let an icy blast reach your pipes.
- Disconnect, drain, and store garden hoses. A frozen garden hose that is connected to an interior pipe can increase pressure throughout the whole plumbing system causing damage.
- During freezing temperatures, open kitchen and bathroom cabinet doors to allow warmer air to circulate the plumbing, especially if your sinks are on an exterior wall (if you have small children or pets, be sure to remove any harmful cleaners and household chemicals).
- Keep the thermostat set to the same temperature during the day and night. If you plan to be away during cold weather, leave the heat on in your home no lower than 55 degrees Fahrenheit.
- Find Your Main Water Cut-off Valve. Look for this now! Imagine the panic, if water was pouring through the house from a broken pipe. Locate the main water cut-off valve, mark it, and make sure everyone in the house knows where it is. Most main water cut-off valves are located on the wall where the water enters the house.

Communication toolkits

- Drought communications
- Frozen pipes
- Fix a Leak
- FOG
- Drinking Water Week…and more!

Public Information Awards 2025

Start planning now to be recognized for your outstanding public relations, education, and outreach efforts!

Award Categories:

- **Water Awareness and Education:** Any program or campaign designed to raise awareness about drinking water quality and supply. Key target groups include K12, teachers, afterschool programs, community organizations, or neighborhoods.
- **Issues and Crisis Management** Any program or campaign designed to handle a crisis situation, unplanned event, or major issue impacting the water quality or supply in your area.
- **Internal Communications** Any program that champions internal communications as a strategy to improve employee engagement.
- **Social Media** Any social media campaign designed to raise awareness about drinking water quality, supply, or utility employees.

Water Awareness and Outreach Committee

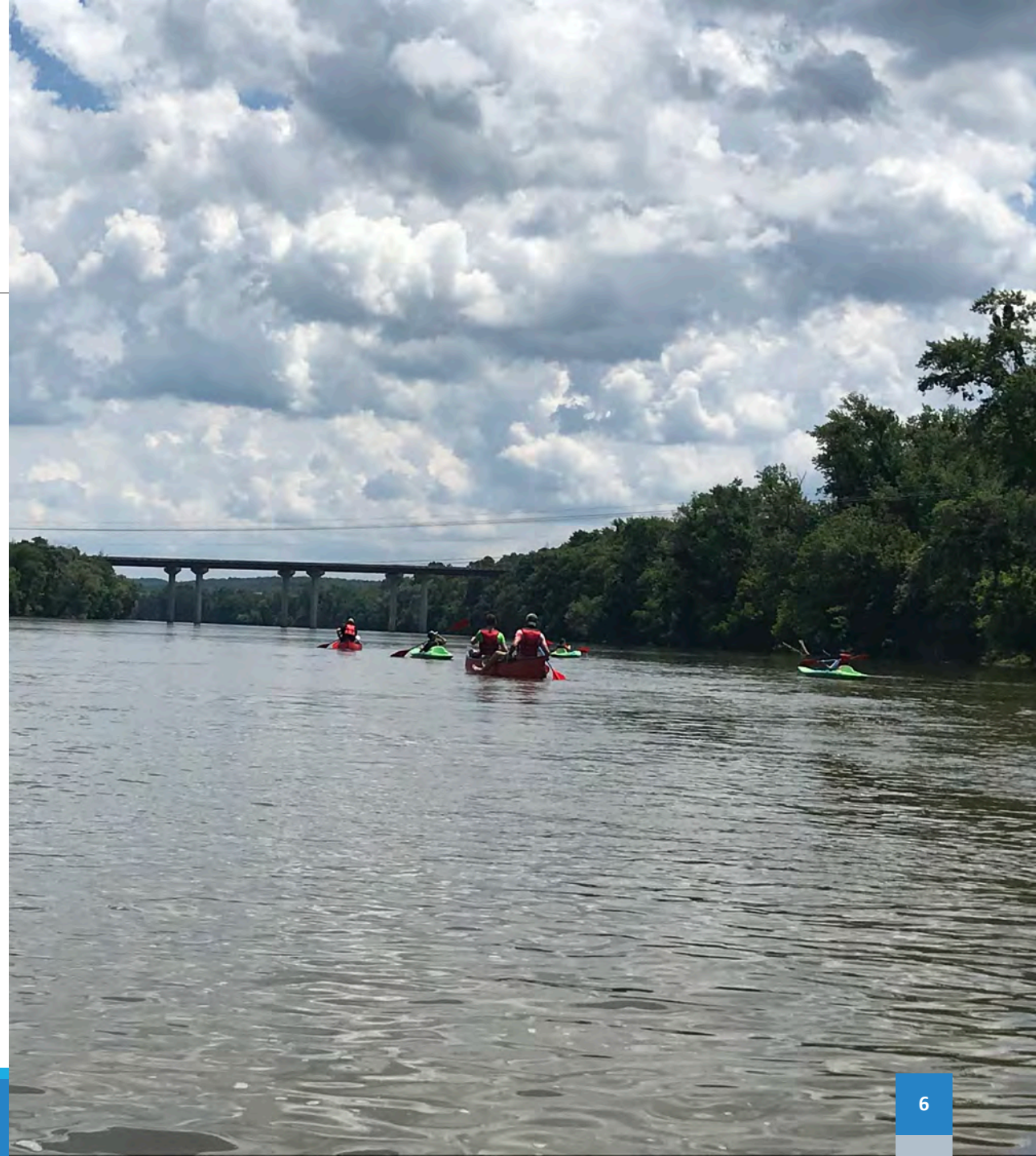
Join Us!

Interested in joining the committee? Want to sit in on a monthly meeting to see what it's all about?

Email

Whitney Roberts, Chair

whitney.roberts@lynchburgva.gov



Student Activities Committee

Mission: Recognize and foster leadership, learning, and development of the next generation of water and wastewater professionals.

Strategic Goals:

- Expand student membership among Virginia Universities offering undergraduate and graduate programs related to the water industry.
- Provide educational and professional development and networking opportunities for students.

Holly Anne Matel, Chair – HMatel@hrsd.com

Justin Manzie, Vice Chair – JManzie@nnva.gov

Overview

Background and Overview

Student Experience and Judging

Recruiting Teams and Engaging Leadership

Planning and Promoting Your Competition

Background and Competition Overview

This competition has been going in Virginia for 10 years and has also run for many years in FL, GA, and NC

Middle schoolers form teams of up to four and build a functional water tower to be tested

Promotes teamwork, STEM skills, recycling, and knowledge of water infrastructure

Benefits to Hosting a MWTC

Host the community at your site and provide them with a positive experience.

Creating advocates. The competition **makes water infrastructure visible to your community**. Students, teachers, and parents will know more about water and how it is delivered.

Cooperation with schools and foot in the door to classrooms.

Student Experience

Build their towers as a team at home and have them judged at the competition

Teams rotate through 4 judging stations:

1. **Structural Efficiency**
2. **Cost Efficiency**
3. **Design Ingenuity**
4. **Hydraulic Efficiency**

A **tour** of the Water Treatment Facility is offered while students are waiting

Dimensions & Structural Efficiency

Structural efficiency is calculated by **dividing** the weight of the model when it is empty by the average height of the tank **times** the amount of water it holds.

The lower this number, the better.

$$\textit{Structural Efficiency} = \frac{\textit{Weight of tower when empty (pounds)}}{\textit{Average tank height (ft) x Amount of water the model holds (gal)}}$$

The tank must be between **1.5 feet and 2.5 feet high**.

Materials & Cost Efficiency

Cost efficiency measures your ability to save money while building your model. **Bring receipts** for all items purchased for the model. Points will be assigned as follows (the lower the score the better):

$0.00 - $5.00	1 pt
$5.01 - $10.00	2 pt
$10.01 - $15.00	3 pt
$15.01 - $20.00	4 pt
More than $20.00	5 pt

Recycled items are encouraged!

Design Ingenuity

Judges will look at how much **imagination and skill** were used in creating the model.

Craftsmanship (is the model sturdy, do the parts fit together nicely)?

Imagination (are the design or materials unique)?

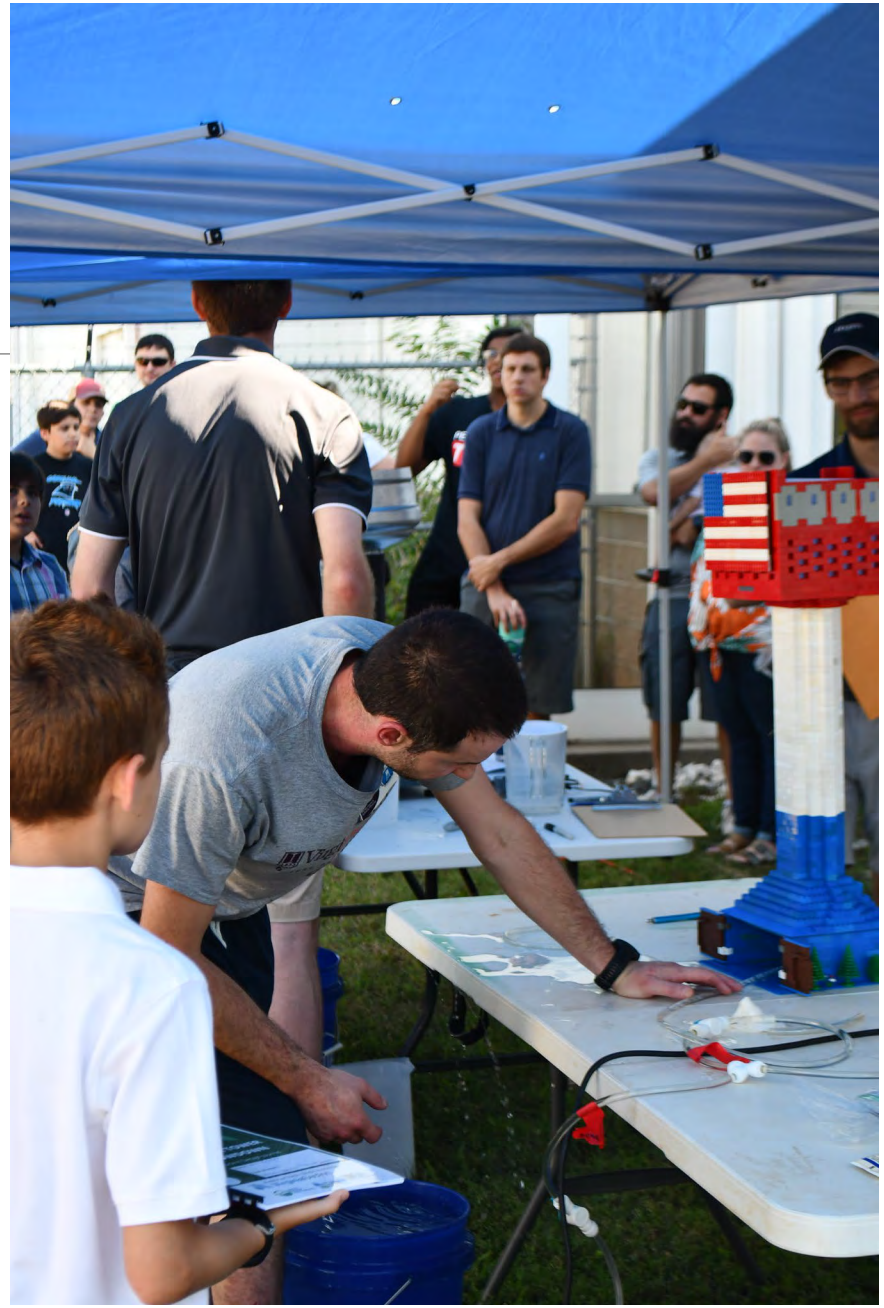
Artistic merit (does the model have creative ideas, colors or themes)?

Hydraulic Efficiency

Hydraulic efficiency is the amount of **time it takes** the judges to fill the model with 1 gallon of water and drain it back out again. The judges will fill the tank through the **3/8” diameter connector**.

The less time it takes to fill and drain the tank through the connector, the better.

The connector must be installed at the base of the model.



Prizes

Cash Prizes and trophies are awarded to the top three scoring teams (lowest score wins):

1st Place: **$75 Visa gift cards***

2nd Place: **$50 Visa gift cards***

3rd Place: **$25 Visa gift cards***

Teacher Raffle: Amazon gift card for school supplies

** for <u>each</u> member of the team*

Tips for Enhancing Student Experience

- Offer **snacks and water**
- Provide a **tour** of the facility (or a nearby water tower!)
- Bring **swag and activities** for students/siblings/parents to do while waiting

Recruiting Teams

Where to Recruit:

- Public, Private and Homeschool Groups
- Clubs and After School Programs
- Summer Camps (if event is in summer)
- Internally – recruit employees' kids

Strategies

- Recruit early and often
- Promote during facility tours and education outreach programs
- Offer support – Curriculum guides, availability for questions, etc.
- Emphasize CASH prize winning

Strategies – Public/Private Schools

- Reach out EARLY
- Meet with program directors and school science coordinators
- Emphasize STEM principles and SOL correlated curriculum
- Offer to guest speak or host students for a tour

VA SOL correlations:
2018 Science *6.1, LS.1, PS.1, 6.9, LS.8, LS.9*
2018 Math *6.5, 6.6, 7.2, 7.3, 7.4, 8.4, 8.8*
2023 Math *6.CE.1, 6.MG.1, 7.CE.1, 7.PS.1, 7.PS.2, 8.PS.1, 8.MG.2*

Strategies - Nonformal Education

- Mention to recreation facilities – typically they plan 6 months in advance
- Encourage camp counselors or parents with the raffle for signing up teams
- Offer support – Curriculum guides, availability for questions, etc.

Planning Your Competition

Location

- Must have a water source for filling towers
- An outside area is preferred for Hydraulic Station
- Multipurpose/conference room
- Consider a place you can offer a tour

Select a date

- During school year vs. summer break
- Weekend vs. weekday

Planning Your Competition

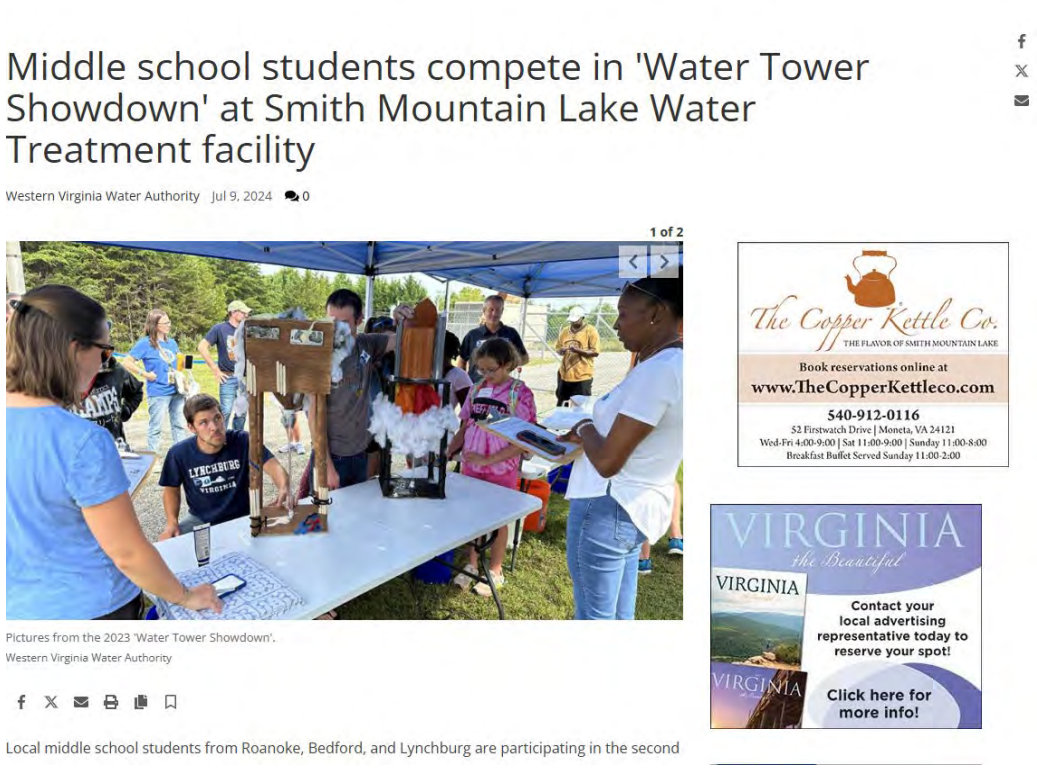
Student Activities support

- Competition Rules
- Budget for prizes and breakfast for volunteers
- Judging equipment
- Logistics for judging stations/registration
- Coordinating volunteers

Promoting Your Competition

- Press Release
- Social Media
- Website
- Email and Flyers for Schools
- Internal Promotion

Success Stories



Middle school students compete in 'Water Tower Showdown' at Smith Mountain Lake Water Treatment facility

Western Virginia Water Authority Jul 9, 2024 0

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Pictures from the 2023 'Water Tower Showdown'.
Western Virginia Water Authority

Local middle school students from Roanoke, Bedford, and Lynchburg are participating in the second

Smith Mountain Eagle
Franklin County Newspaper

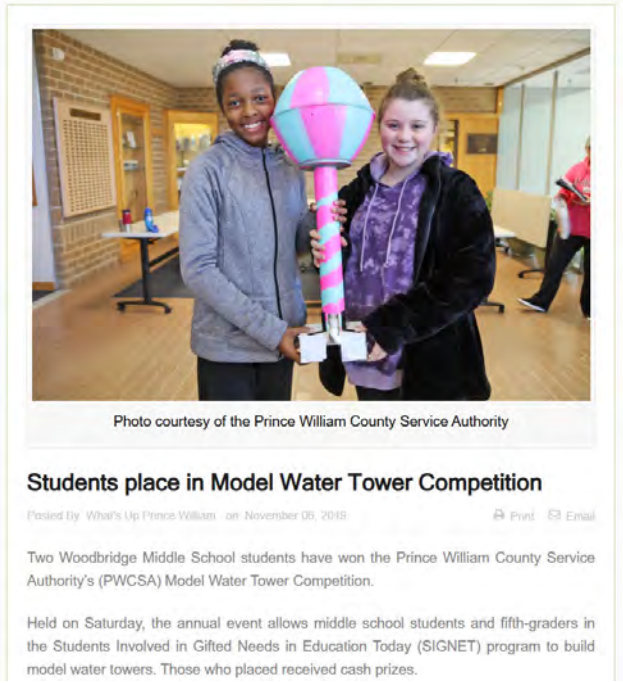

Photo courtesy of the Prince William County Service Authority

Students place in Model Water Tower Competition

Two Woodbridge Middle School students have won the Prince William County Service Authority's (PWCSA) Model Water Tower Competition.

Held on Saturday, the annual event allows middle school students and fifth-graders in the Students Involved in Gifted Needs in Education Today (SIGNET) program to build model water towers. Those who placed received cash prizes.

What's Up Prince William
Prince William County Community Newsletter

HRSD SWIFT Research Center

Thank you!

Whitney Roberts
Communications Specialist
Lynchburg Water Resources
Whitney.roberts@lynchburgva.gov

Mark Titcomb
Chief of Process Reliability
Newport News Waterworks
MTitcomb@nnva.gov

Shirley Smith
Project Manager
HRSD
SLSmith@hrsd.com

Lilly Meighan
Communications Specialist
Western Virginia Water Authority
Lillian.meighan@westernvawater.org

Laura Schirmer
Public Relations Specialist
Western Virginia Water Authority
Laura.schirmer@westernvawater.org